MONTEREY BAY NATIONAL MARINE SANCTUARY RESEARCH ADVISORY COMMITTEE MEETING

Thursday, February 3, 1993

Attending:

G. Cailliet, Moss Landing Marine Lab
F. Cava, NOAA/NOS/Sanctuaries and Reserves Division
C. Collins, Naval Post Graduate School
H. Curl, NOAA/HAZMAT & Gulf of the Farallones NMS
A. DeVogelaere, Elkhorn Slough NERR
S. Eillreim, US Geological Survey
M. Eldridge, NOAA/NMFS/Tiberon Lab
H. Golde, NOAA/NOS/Sanctuaries and Reserves Division
G. Greene, US Geological Survey
G. Griggs, UCSC Institute of Marine Sciences
T. Groves, California Coastal Commission
C. Harrold, Monterey Bay Aquarium
T. Jackson, Monterey Bay NMS
D. Johnson, California Dept. of Fish and Game
S. Kimple, Elkhorn Slough NERR
V. Nichols, Save Our Shores
D. Powers, Hopkins Marine Station
B. Robison, Monterey Bay Aquarium Research Institute
W. Schramm, NOAA/Center for Ocean Analysis and Prediction
G. Sharp, Cooperative Institute for Research in the Integrated Ocean Sciences
M. Silberstein, Elkhorn Slough Foundation
R. Starr, California Sea Grant
M. Stevenson, Marine Pollution Studies Lab (CDF&G)
M. Yoklavich, Pacific Fisheries Environmental Group

Bruce Robison and Greg Cailliet introduced the meeting.

Terry Jackson, Sanctuary manager: Gave an overview of the permitting process and what activities need to be permitted in the Sanctuary. He discussed the coordination of research in the Sanctuary and brought up the idea of having a database of all research in order to identify who is doing what. The question was brought up whether each individual activity needs a separate permit. This was countered with the idea of blanket permits to cover activities from a single institution.

For the rest of the day, representatives of the various institutions gave presentations.

Greg Cailliet, of Moss Landing Marine Labs: Had a handout which listed all of the faculty members and their interests/specialties.

Gary Griggs, of UCSC Institute of Marine Sciences: Explained that this is not a teaching

group but an organized research unit. There are five general areas of research:

1. marine mammals
2. environmental toxicology
3. invertebrate & marine biology
4. ocean processes/paleooceanography
5. continental ecology/geology.

A study plan to map the geologic region has been requested by Leon Panetta to gain understanding of the morphology, tectonics, wetland loss, etc.

The USGS marine branch is planning on moving to Monterey.

Steve Eillreim, USGS: Working on the study plan with UCSC (who may provide graduate students) as discussed above. Techniques such as side scan sonar and high resolution mapping will be used to describe the geologic environment, focusing within the Sanctuary boundaries. Questions such as sediment transport into the canyon may necessitate work outside of the boundaries. Work may also extend northward into the Gulf of the Farallones Sanctuary boundary.

Rick Starr, UC Sea Grant: Works as an advisory interface between the research community and the public. Public education and research in:

- aquaculture
- non-point source pollution control
- dredging
- commercial and recreational fisheries
- resource management policy
- coastal planning and development.

Can work with the Sanctuary on research and education issues. May be able to help set up GIS database system showing the distribution of Sanctuary resources.

Gary Greene, USGS: General geologic research covers several areas.

- Cold seep communities in 4 major hydrologic regimes
- rockfish habitat study (w/ MLML); biological-geological coupling looking at habitat types
- tectonic study of the canyon
- seismograph on the seafloor (w/ MBARI)
- mass wasting in the canyon
- modeling of the canyon

Curt Collins, Oceanography Department, Naval Post Graduate School: Major purpose is to teach graduate classes. Also doing oceanographic research in Monterey Bay:

- CODAR observations; measuring current by radio frequency at three sites in Bay
- long time-series hydrographic and current meter data at Pt. Sur
- Santa Cruz tide gage; large differences from Monterey
- coastal ocean modeling
- wave and surf processes

There are several things which need to be done:

- verify CODAR observations (compare with OSCAR)
- continue development of numerical ocean circulation model
- maintain long time-series data sets
- observe wind buoyancy forcing on horizontal gradients
- Bay circulation is the highest priority.

Bruce Robison, MBARI: The mission is to conduct basic oceanographic research.

- emplacement of facilities on sea floor to conduct long term research and monitoring in the canyon/instrument deployment with ROVs
- time lapse video of cold seep sites
- local area acoustic network; encode instrument data and transmit to shore in real time There are several projects planned for 1993:
- benthic ecology community assessment (>500 m)
- cold seep sites; biological-geological linkage
- midwater animals; bioluminescence, gelatinous animals, studies with ROV and moored
- instrument platforms
- marine snow assessment
- chemical instrument group; spectrophotometric assessment
- moored CO2 sensing system
- rock drill of the sea floor from ROV
- moored instrument arrays

There are several areas in which the sanctuary can benefit from MBARI:

- measurement of current patterns in the Bay are fundamental to every area of research
- mapping and modeling of the Bay, including the canyon
- coordination of satellite imagery
- coordination with NOAA research fleet
- moorings

Also a need for protection of deployed instruments and discussion/interaction with commercial fishermen.

Andrew DeVogelaere and Mark Silberstein, Elkhorn Slough NERR: There is a lot of potential for cooperation with the Sanctuary. The main channel is in the Sanctuary. Also cooperate a lot with other state agencies (Cal Fish and Game is sponsoring agency) and have a large volunteer program. Potential linkages with the Sanctuary exist with:

- Non-point source pollution; strawberry production causes large runoff of pesticides
- tidal scour; large amount of sediment runoff with opening of Moss Landing Harbor
- algal production
- set aside areas of tideflats
- habitat restoration in watershed

The LMER program is probably a good strategy to link the Sanctuary and the Reserve and to get additional funding. AMBAG can probably help with tracking of research in the Bay. Suggestion that SRD can endorse research proposals to other funding agencies. Also a suggestion that public and community needs (such as fishing) should be represented on the advisory committee.

Deborah Johnson, California Fish & Game: Discussed the organization of the Department.

Organized into three branches.

1. Fisheries: commercial, in state water, composition, squid, Pismo clams, sport fishing, party boats
2. Oil spill prevention & response: spill response, wildlife rehabilitation, bioremediation
3. Environmental services: water quality standards, effects of discharge, environmental planning, toxicology, marine pollution mussel watch

Mark Stevenson, Marine Pollution Studies Lab: Run several programs:

- State mussel watch; some of the same sites as NOAA program, high contaminates in
- Elkhorn Slough
- Toxic Cleanup Program; sediment assays, identify hotspots, rank sites for remediation,
- develop sediment quality objectives
- Marine Bioassay Project; look at chronic toxicity of effluents
- Oil Spill Cleanup Agent Research Project; how oil spill dispersant effects toxicity (funded by Fish & Game)

Chris Harrold, Monterey Bay Aquarium: Research program is applied, responsible for understanding the biology and husbandry of critters:

- life support for exhibits
- R & D of deep sea and open ocean
- bacterial and phytoplankton cultures
- life history and basic biology of animals on exhibit
- sea otter rescue and care

Also some basic research relevant to exhibits:

- sea otter behavior
- giant kelp populations; impacts of currents and wave action
- seep communities
- deep sea organisms may need O2 deprived water
- Tuna facility with Hopkins

Priorities for Sanctuary research include monitoring of nearshore, marine mammal and marine bird communities.

Dennis Powers, Hopkins Marine Station: The area around Hopkins is a California Marine Refuge. Most of the research being done looks at marine animals as model systems. The thrust in the future is to integrate from ecosystem/whole organism behavior down to molecular/genetic level. Also a lot of student research. Some projects include:

- UV B effects on kelp
- Tuna and warm blooded fish
- biodiversity
- neurobiology using squid and anemones as models

Gary Sharp, Cooperative Institute for Research in Integrated Ocean Sciences:

The Sanctuary provides the backbone for the local research community. The information must be organized and the data must be shared. The next generation of work is in applied science.

Ft. Ord is a good base for an information network.

Bill Schramm, Center for ocean analysis and prediction: The coordinating committee for local institutions should work on:

- linking activities, sharing information, filling in gaps; ocean circulation
- land based information gathering instruments are needed
- more buoy data are needed
- water quality; mussel watch, sensors, LMER
- integrated coastal management
- regional library of environment (Ft. Ord development)
- satellite data

Mary Yoklavich, Pacific Fisheries Environmental Group:

Looking at the effects of the environmental variability on the fishery. Modeling to link biology with environmental conditions. Most work is collaborative because there is no field operations budget.

- F. Swing: model of canyon circulation; moorings in deep canyon, circulation around Gulf of the Farallones
- M. Yoklavich: biologist; transport processes of young rockfish, environmental variability & effect on young juveniles
- time/space trends in sport fishing industry
- COMBROS; Consortium of MB Regional Oceanographic Scientists; focuses on MB in the spring (ENSO)

Mickey Eldridge, NMFS Tiberon Lab: Does a lot of work in all of the Sanctuaries. Groundfish lab to manage fisheries and do simulation models. Tasks in Monterey Bay:

- rockfish recruitment; monitoring stations
- remote sensing to assess populations
- quantitative groundfish analysis
- link recruitment to oceanography
- physiological ecology

Francesca Cava, NOAA/Sanctuaries and Reserves Division: Discussed the concept of integrated coastal management. SRD cannot fulfill its mandate without help. Monterey Sanctuary is a good possible test case.

Herb Curl, Gulf of the Farallones National Marine Sanctuary: Current research includes:

- radioactivity from drums dumped in Sanctuary
- intertidal monitoring
- Stellar sea lion monitoring
- seasonal population indices
- marine debris/oil

RFPs which are soon to go out:

- non-point source pollution
- pelagic survey training
- development of GIS database
- study of ashy storm petral

Future work that they would like to do:

- minke whale monitoring
- humpback and bluewhale monitoring
- monitoring two estuaries
- monitoring white shark
- marsh restoration in Tomales Bay

Friday, February 4, 1993

Attending

(designated members of the Research Advisory Committee):

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H. Curl, NOAA/HAZMAT & Gulf of the Farallones NMS
A. DeVogelaere, Elkhorn Slough NERR
H. Golde, NOAA/NOS/Sanctuaries and Reserves Division (SRD)
G. Griggs, UCSC Institute of Marine Sciences
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There were several topics of general discussion on the second day of the meeting.

Permits and the permitting process.

It was suggested that all institutions should connect themselves to an electronic mail system, such as OMNET or Internet, so that most phases of the permitting, including reporting, can be done electronically to save time. This would also allow a bulletin board to be set up so that summaries of all research could be shared. Thus, sharing of resources, such as boat time, could be more easily facilitated. On the subject of institution-wide blanket permits it was suggested that since each institution develops a research plan for the year, this plan can be used as a basis for a year-long research permit. Any projects which come up during the course of the year will be covered by additional permits. A liaison from each institution will be designated to work with Terry Jackson and the Research Coordinator on permitting issues. Researchers would like to have permits given by other regulating bodies (e.g. Cal Fish & Game) recognized by SRD.

[**Note**: SRD headquarters will work with Terry Jackson to come up with a blanket permitting process which is acceptable to all.]

Representation on Research Advisory Committee.

Several groups are not represented on the committee, namely marine mammals, coastal commission, and cultural resources. It was decided that Tami Groves would be on the committee representing the Coastal Commission and cultural resources interests (she can work with Historic Preservation people if needed). Terry Jackson has targeted someone from the Marine Mammal Lab, as they are not primarily a research entity, in Seattle to sit on the committee. It was decided that commercial fisheries need not be represented although the matter of communication with the fishing industry was brought up.

Leveraging additional funds.

The question of additional sources of funding was brought up since SRD has limited funding for research in the Sanctuary. The National Science Foundation's Land Margin Ecosystem Research (LMER) was suggested as a good program under which funding might be obtained. This program deals with many of the pertinent issues that exist in the Sanctuary and will tie together well with Elkhorn Slough NERR. Funding under this program can also be used to leverage funding from other sources. The problem lies in finding someone (preferably an ecologist) to take the lead in writing a proposal and coordinating this effort.

[**Note**: The Waquoit Bay NERR on Cape Cod is currently an LMER site, jointly funded by NSF, EPA and NOAA/SRD]

Role of Research Coordinator.

A position description for a Sanctuary Research Coordinator is in the NOS Personnel Office. The role of the person hired as Research Coordinator was discussed. It was agreed that the person hired should coordinate the various research institutions, be in charge of research permits, should work to leverage additional funds, coordinate Sanctuary research with other state agencies, and implement a monitoring program. This might include working with the Coastal Commission to get the California delegation to introduce special legislation for research funding for the Sanctuary. There was some discussion about whether the Research Coordinator should also be in charge of writing the site characterization document. It was suggested that this task would probably be done better if contracted out, with oversight by the research coordinator and SRD.

Site characterization.

One of the first research tasks (for which SRD has set aside $20K) is to generate a site characterization. This should consist of a synthesis of all existing information about the Sanctuary. Once this information is put together, it will be much easier to see where gaps in the information are and where additional work should be targeted. It was decided that this should be contracted out. Will probably take 2-5 years to finish, depending on funding.

Priorities.

In order to set the research priorities for the Sanctuary working groups were set up to look at different fields. Each working group will be headed by one or two members of the Research Advisory Committee. Those individuals are responsible for contacting the people they feel are the appropriate experts who will form the groups. The working groups and their leaders are:

- geology and physiography: G. Greene
- ecological interactions: G. Cailliet & C. Harrold
- chemistry and water quality: M. Stephenson

- physical oceanography: F. Swing
- land margin interactions: G. Griggs & A. DeVogelaere
- human impacts and fisheries: T. Groves, R. Starr, M. Yoklavich & T. Jackson
- communications and information dissemination: G. Sharp

Each group is is to have a one time meeting to set priorities and make recommendations to the Sanctuary. The Committee will then meet and integrate all of the suggestions together. The questions which should be addressed in the working groups include:

- What are the major concerns in each field?
- What do we already know?
- Set priorities and research objectives to answer these questions.
- How can the Sanctuary be used as a model to address these questions?
- How does this relate to other areas and the real world?

The next meeting of the Research Advisory Committee will be Friday, April 30, 1993. All working group leaders should bring a written summary of their group's findings.

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